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e-HR Systems Implementation: A Conceptual Framework

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ABSTRACT

Information and Communication Technologies (ICT) enable innovative ways of carrying on routine organizational tasks via the power of virtual work environment. Piggy-backing on the success of E-commerce systems, organizations are increasingly making use of Web-based Human Resource Management (e-HR) systems. These systems offer organizations the promise of huge performance improvement as well as of overhauling the entire HR function itself. This latter possibility is expected to offer competitive advantage to organizations. However, it is not known (a) at what level of sophistication should organizations pitch their e-HR systems and (b) what contextual factors moderate the relationship between e-HR systems implementation and their benefits. In this research-in-progress paper we offer a conceptual framework and a research plan to develop a theory of e-HR systems implementation.

Keywords

Information and Communication Technologies (ICT), e-HR systems, Information Systems, Employee Factors, HR Strategy, Organizational Culture and Values, Organizational Communication Patterns.

INTRODUCTION

In today's organizations, thanks to Information and Communication Technologies (ICT), Human Resource Management (HRM) is undergoing a major change. One agent of change identified by researchers is the use of the Internet and the Web technologies to augment and enhance HRM (Gueutal and Stone, 2005; Legnick-Hall et al, 2003). Such use of the Internet and the Web technologies is popularly referred to as Electronic HR (or e-HR). This term gained currency along with its more popular cousin, e-commerce. In the 90s organizations started using the Internet and the Web technologies for a myriad of human resource (HR) activities like payroll, employee directories, and for communicating with employees (Gueutal and Stone, 2005). As Web technologies matured and organizations enthusiastically adopted them, more and more of the HR functions got Web-enabled. So much so that the impact of the Web technologies on HR functions is being dubbed as "transformational" (Legnick-Hall et al, 2003). While e-HR systems indeed offer wide-ranging and unprecedented benefits to organizations, they also entail huge costs and risks (Bell et al, 2006; Weekes, 2006; Anonymous, 2006). Such costs emanate not only from the systems costs but also from those associated with changing the organizational processes, employee training, and the time of the HR and the top management in implementing, adopting, and promoting these systems. Risks inhere in employees not using the system as well in employee alienation and resistance to change. Thus the purpose of this ongoing research is to (a) study the relationship between e-HR systems implementations in organizations and their benefits and (b) identify the factors that moderate the above relationship. We are currently involved in large-scale field studies through which we expect to shed some light on this important phenomenon and build a solid theoretical foundation for future studies. In the next section we briefly describe our studies and the model that serves as the basis of our study. This is followed by a description of our research methodology. This is followed by a discussion of our future research plans and conclusions.

THE CONCEPTUAL MODEL

Since implementation of e-HR systems is a new phenomenon, not much literature is available in this area. We grounded our study in available literature, and borrowed heavily from other disciplines like Information Systems, Organizational Culture and Behavior, Organizational Communication, and of course, Human Resource Management. Recently an Executive Development Program was organized at one of the co-author's premier management institute. Twenty one HR managers from the top Indian organizations attended this program. We used this opportunity to conduct a brainstorming session with HR managers. The purpose of this 90 minute session was to gain insights into the dynamics of e-HR systems

implementations. We followed up this group brainstorming session with detailed one-on-one discussions with many managers. Based upon our theoretical studies and interaction with practitioners, we developed a model for e-HR Systems Implementation (shown in Figure 1). Next we briefly describe the model.

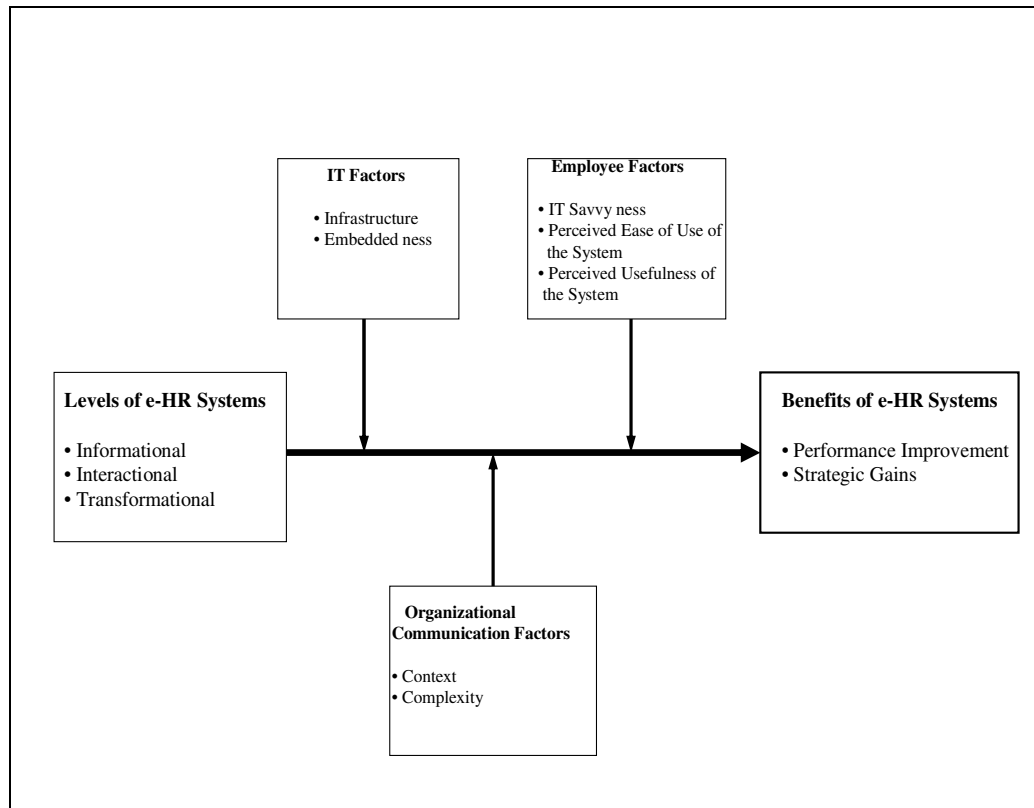


Figure 1. Levels of eHR Systems Implementation in Organizations its Benefits

Levels of e-HR Systems

Researchers have mentioned three levels of e-HR system implementation (Legnick-Hall et al, 2003). The first level, called the “Informational”, consists of using the Web technologies to publish HR related material (e.g. directories, policies, and notices) on a corporate intranet. The second level, called “Interactional”, consists of making employee related tasks like leave applications, management of benefits, and performance appraisal interactive via Web technologies. The third level, called the “Transformational”, endeavors to overhaul the HR function itself. At this level most of the routine HR activities take place via smart suites of applications (like PeopleSoft/Oracle and SAP HR) which are integrated with the rest of the Enterprise applications. This frees up the HR managers and staff to devote to HR development and strategies. For example, HR managers get involved in facilitating computer based learning for the employees. More importantly, the role of HR gets transformed to that of storing, retrieving, and disseminating organizational knowledge (Legnick-Hall et al, 2003; Gueutal and Stone, 2005).

Benefits of e-HR

Brynjolfsson via his seminal 1993 paper raised the issue of elusive gains from Information Systems (Brynjolfsson, 1993). Since then the Productivity Paradox of Information Systems has been “revisited” (Barua and Lee, 1997). Information Systems (IS) researchers now agree upon and conceptualize organizational gains from IS to occur at three distinct levels. The lowest of these gains automates organizational processes and thus makes them more efficient. Effectiveness gains accrue when organizations not only automate, but also redesign and integrate their business processes. At the highest level,

organizations gain competitive advantage by leveraging IS to create barriers to entry, switching costs, bringing out new products, and capturing new markets (Laudon and Laudon, 2007). In our conceptual model we combine the first two levels of IS-induced gains from e-HR systems in a variable called "Performance Improvement".

Higher levels of e-HR systems implementation invariably enfold the lower levels. It stands to reason that higher the level of e-HR systems implementation, more will be the benefits. This is so because through e-HR systems, organizations are able to reduce the paper trail in HR processes, reduce work-load on HR employees as many of the tasks are performed by the employees themselves, and organizational competitiveness improves as HR personnel are freed to devote time to HR Development. Hence we propose:

P1: The higher the level of e-HR systems implementation in an organization, the better will be the performance of its HR and higher will be the strategic gains.

e-HR systems implementation in organizations is likely to entail huge costs. These costs not come from the actual systems costs (software, hardware, networks), but also from the costs of training employees in the use of new systems, top and HR managers' involvement in strategizing and implementing such systems, and costs of making employees accept a new system. Not all organizations are likely to derive benefits commensurate with the costs of implementing an e-HR system. Our research findings suggest that many organizational and environmental factors must be present for organizations to derive benefits that will outweigh costs. As shown in Figure 1, we have identified three such contextual factors, which we discuss next.

IT Factors

One IT factor that we have identified as playing a critical role in the success of integration e-HR systems is the firm's information technology infrastructure required for the creation of e-HR systems. Presence of sophisticated computers, programs, networks, and the expertise to create good systems has been recognized as an important factor in creating good information systems (Gunasekaran and Ngai, 2004, Sakaguchi and Nicovich, 2004). The other IT factor of interest is IT embeddedness. IT researchers have also applied Uzzi's (1996) concept of social embeddedness to the strategic use of Information Systems (Chatfield and Yetton, 2000). IT embeddedness in these researchers' conceptualization refers to the use of information systems toward realization of strategic goals (Chatfield and Yetton, 2000). Firms that are characterized by high IT embeddedness exploit the power of information systems toward quick dissemination of information and problem solving. \

Existence of a well-developed information technology infrastructure (i.e., hardware, software, networks, and human expertise) is crucial for the creating e-HR systems. The linkage between the quality of IT infrastructure and the success of sophisticated information systems has been established in the IS literature (Brancheau, 1996; Kweku, 1997; Karimi, et al, 1996).

If information systems are already highly embedded in an organization's processes, operations, and internal interactions, the benefits of higher levels of e-HR systems are likely to be higher. In the case of highly embedded information systems, employees of a firm already engage in a great deal of interaction, exchange of sensitive information, and joint problem solving online (Chatfield and Yetton, 2000). These employees are more likely to understand each other's online communication, data, information, and knowledge exchange and can grasp quickly the context and the significance of the data, information, and knowledge exchange. Also, when information systems are highly embedded in a an organization, then employees can understand almost intuitively how and what it takes to automate various HR processes in an organization and what type of adjustments are needed in their work methods, processes, and social systems to make the transition to e-HR systems smooth and successful. On the other hand, if information systems are less embedded in the firm, employees may face a struggle in implementing highly sophisticated e-HR systems to manage HR activities.

Thus, when information systems are highly embedded in an organization, more sophisticated e-HR systems are likely to lead to better and faster exchange of data, information, and knowledge and thus result in higher level of outcomes. In effect, under conditions of high embeddedness, the benefits of higher levels of e-HR systems are expected to outweigh the costs of the creating such systems. Therefore,

P2: The more sophisticated the information infrastructure in an organization, the greater the net benefit of high levels of e-HR systems in the organization.

P3: The more embedded the information technology in an organization, the greater the net benefit of high levels of e-HR systems in the organization.

Employee Factors

Employee factors seem to have a marked effect on the success of e-HR systems in organizations (Dessler, 2003). Many factors – education level of employees, their familiarity with information systems, and the nature of the industry – seem to play a pivotal role in the employee's readiness to use e-HR systems. Some of the participants in our brainstorming session were from the IT industry. Employees in such firms readily took to the transition to e-HR systems and were comfortable with making their information available on a corporate intranet as well as with receiving on-line feedback and support from the HR personnel. One IT firm is even conducting part of its exit interviews on-line. Quite a few of the participants from the IT firms mentioned that because their employees are tech savvy, they have no problems with HR being transitioned online.

The remaining two variables under the 'Employee Factor' category come from the Technology Acceptance Model (TAM) (Davis, 1989). According to this model, if users of an information system do not perceive it to be easy to use or useful, then they are not likely to use the system. TAM is a well-established model in IS research that looks at information systems from a user's perspective (Davis, 1989; Davis et al, 1989, Brown et al, 2002). If e-HR systems are not perceived to be easy to use by the employees of an organization, then they are not likely to adopt them fully. Likewise if these systems are not perceived to be useful by a firm's employees, they are not likely to use them. Thus perceptions of the employees about e-HR systems implemented by an organization are likely to be an important factor in determining if the benefits of higher levels of e-HR systems are expected to outweigh the costs of creating such systems. Therefore,

P4: Higher the IT savvy ness of a firm's employees, the greater the net benefit of high levels of e-HR systems in the organization.

P5: Higher the perceived usefulness of e-HR systems in the minds of the employees, the greater the net benefit of high levels of e-HR systems in the organization.

P6: Higher the perceived ease of use of e-HR systems in the minds of the employees, the greater the net benefit of high levels of e-HR systems in the organization.

Organizational Communication Factors

Another important factor that seems to moderate the success of e-HR systems relate to communication patterns in an organization. Effective communication has consistently been mentioned as one prime requirement of organizational effectiveness (Penrose et al, 2005; Punnet, 2004). This is so because effective communication is essential for people who work together to achieve individual or collective goals (Penrose et al, 2005). Communication, which is the transfer of meaning between persons and groups, ranges in value from completing organization tasks and missions to creating and maintaining satisfying human relationships. Effective communication, on its part, consists of knowing the degree of communication or context that must be supplied to the employees. Looked another way, everything that the management does, is a form of communication to the employees. Some organizations send strong, consistent messages that are easily grasped and understood by employees (Hall and Hall, 1990). Furthermore, organizational messages are imbedded in the context of the communication and the choice of the channel could be disastrous as a message released due to wrong choice could lead to negative or frustrated response. Additionally, almost all communication can be placed along the fast/slow continuum. For example, a person in essence is a slow message because it takes time to get to know a person well. On the other hand, electronic means of communication are much faster. Many organizations seem to be unaware of the fact that speed of communication determines the effectiveness of communication.

Context of communication is related to how much information is enough for the exchange of messages. A high context communication is one in which most of the information is already embedded in the person while very little information is in the coded, explicit, transmitted part of the message. A low context communication is just the opposite, i.e., the mass of the message is invested in the explicit code (Hall and Hall, 1990; Hoecklin, 1994). Organizations too have a high or low context of communication in their culture. Depending on the nature of the context, e-HR is likely to be less or more effective.

Context may perform multiple functions as shifts in this parameter may either signal a warming of the relationship with the employees or may signal it's opposite. Therefore,

P7: The more high-context the organizational culture, the more difficult the interface between e-HR and employees is likely to be, thus leading to lower net benefit of high levels of e-HR systems in the organization.

P8: The greater the complexity of the communication elements, the less effective the e-HR in the organizations is likely to be, leading to lower net benefit of high levels of e-HR systems in the organization.

Other Moderating Variables

In this research we have so far focused on the above mentioned three variables that are expected to moderate the relationship between the levels of e-HR systems and their benefits. However, there are other variables as well that have been alluded to by HR managers that we interacted with. One such variable, Organizational Factors, is likely to have a powerful moderating effect. HR managers in our study mentioned the high level of senior management support to e-HR systems as being critical to their success. These managers also talked about the importance of HR in an organization, the level of organizational transparency and trust, as well as the global orientation of the firm as having a bearing on the success of e-HR systems. Still another factor that needs to be considered to have a moderating effect concerns with HR itself – viz., HR policies, practices, and strategies. Due to limitation of space, and as this is still a research-in-progress piece, we haven't developed and discussed these two variables.

RESEARCH METHOD AND FUTURE PLANS

This research is qualitative in nature. Qualitative methods are well suited to research an area about which little is known (Stern, 1980). As mentioned earlier, we conducted a 90 minute brainstorming session with twenty one HR Managers from a myriad of industries – IT, hospitality, manufacturing, finance, retail, and defense. The initial session provided us with some thoughts to work on. Based upon the initial brainstorming session and our theoretical understanding of the field, we conducted a number of semi-structured interviews with HR Managers. Relying on such “theories-in-use” of thoughtful practitioners for theory building is advocated as an appropriate and desirable method for studying a phenomenon that is new, and thereby, lacking in systematic and rigorous research (Cooper, 1995). Our initial working model (Figure 1) resulted. A number of working propositions (P1 through P8) were a result of the brainstorming session, a few interviews, and our logical reasoning. Next, we will conduct more in-depth interviews in different industries. In particular, one global company has commissioned us to do a detailed study of its e-HR systems implementation. That company, for the next few months, will serve as our primary field study site. In addition to writing a detailed case for the primary research site, we will also write up a few more cases that will emerge from our other interviews. Thus, at the end of this data collection period, we will have a few rich cases. Thereafter we will conduct a cross-case analysis (as recommended by Eisenhardt, 1989) to glean theoretical insights. These insights will be used to enhance, modify, or change our conceptual framework and propositions.

CONCLUSIONS

In this research-in-progress paper, we started with studying an interesting phenomenon – e-HR system adoption – that is fast gaining popularity. We have argued that conceptually e-HR systems exist at three distinct levels of granularity. Furthermore, we have argued that implementation of these systems can offer organizations two distinct levels of benefits, viz., performance improvement and strategic advantage. We have delineated three contextual factors that moderate the relationship between the levels of e-HR systems implementation and their benefits. These relationships are used to build some propositions that articulate the effect of the moderating factors on the focal relationship. Thus, we have laid the foundation for a theoretical investigation of a contemporary and under-researched phenomenon. Our framework will guide our future research, at the end of which we expect to present a rigorous research model grounded in field data. For practitioners, our framework is expected to provide guidelines and pointers about the success of e-HR systems implementation. Practitioners will be able to learn from the case studies that we will conduct during the course of this research. Besides, our findings will enable a more generalized understanding of e-HR systems implementations than what is available in case studies alone.

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